

## VARIABLE TRANSMISSION LINE TRANSFORMER

### ABSTRACT

A transmission line transformer (102) having an electrical length and a fluid dielectric (108). A fluid control system (150) is also provided for selectively  
5 moving the fluid dielectric (108) from a first position to a second position. In the first position, the fluid dielectric (108) is electrically and magnetically coupled to the transmission line transformer (102) to produce a first impedance transformation. In the second position, the fluid dielectric is electrically and magnetically decoupled from the transmission line transformer (102) to produce a  
10 second impedance transformation distinct from the first impedance transformation. The fluid control system (150) can be responsive to a control signal (174) and can include a pump (154) for moving the fluid dielectric from the first position to the second position.